

AMENDMENT UNDER 37 C.F.R. § 1.111
Application No.: 10/067,266
Atty Docket No.: Q63212

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1. (previously presented): An electrical insulating vapor grown carbon fiber having a fiber diameter of 0.01 to 0.5 μm , a hollow part in the center of the fiber and a boron concentration formed from a mixture of a boron compound and a vapor grown carbon fiber, the mixture having a boron concentration of about 1 to about 30% by mass in terms of a boron element, wherein the surface thereof is partially or entirely coated with an electrical insulating material of boron nitride and the amount of boron in a depth of 1 nm from the surface of the vapor grown carbon fiber is about 10% by mass or more, based on the entire mass of the vapor grown fiber having a depth of 1 nm from the surface, and wherein the electrical insulating vapor grown carbon fiber has a specific resistivity of $10^3 \Omega \cdot \text{cm}$ or more when compressed at a bulk density of 0.8 g/cm^3 .

Claim 2. (canceled).

Claim 3. (currently amended): The electrical insulating vapor grown carbon fiber as described in Claim 1, wherein the boron nitride is present in an amount of about 2% by mass or more based on the entire amount of vapor grown carbon fiber and the vapor grown carbon fiber has a Co value of 0.680 nm or less.

Claim 4. (canceled).

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Claim 5. (previously presented): The electrical insulating vapor grown carbon fiber as described in Claim 1, wherein the fiber has a heat conductivity of about $150 \text{ Wm}^{-1}\text{K}^{-1}$ or more when compressed at a bulk density of 0.8 g/cm^3 .

Claim 6. (canceled).

Claim 7. (previously presented): A method for producing an electrical insulating vapor grown carbon fiber coated with boron nitride, comprising mixing a boron compound with a vapor grown carbon fiber having a fiber diameter of 0.01 to $0.5 \text{ }\mu\text{m}$ to form a mixture, compressing the mixture and heat-treating the compressed mixture at $2,000^\circ\text{C}$ or more in the presence of a nitrogen compound to form a boron nitride electrical insulating material.

Claim 8. (currently amended): The method for producing an electrical insulating vapor grown carbon fiber as described in Claim 67, wherein the nitrogen compound is nitrogen.

Claim 9. (currently amended): The method for producing an electrical insulating vapor grown carbon fiber as described in Claim 67, wherein the boron compound is at least one member selected from the group consisting of elementary boron, boric acid, borate, boron oxide, B_4C and boron nitride.

Claim 10. (currently amended): The method for producing an electrical insulating vapor grown carbon fiber as described in Claim 67, wherein the mixture of the boron compound and the vapor grown carbon fiber has a boron concentration of about 1 to about 30% by mass in terms of the boron element, based on the entire mass of the vapor grown carbon fiber.

Claim 11. (previously presented): An electrical insulating composite material comprising a synthetic resin or synthetic rubber composition containing an electrical insulating

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vapor grown carbon fiber a fiber diameter of 0.01 to 0.5 μm , wherein the surface thereof is partially or entirely coated with an electrical insulating material of boron nitride and the amount of boron in a depth of 1 nm from the surface of the vapor grown carbon fiber is about 10% by mass or more, based on the entire mass of the vapor grown fiber having a depth of 1 nm from the surface, and wherein the electrical insulating vapor grown carbon fiber has a specific resistivity of $10^3 \Omega\cdot\text{cm}$ or more when compressed at a bulk density 0.8 g/cm^3 .

Claim 12. (canceled).

Claim 13. (previously presented): The electrical insulating composite material as described in Claim 11, wherein the boron nitride is present in an amount of about 2% by mass or more based on an entire amount of vapor grown carbon fiber and has a Co value of 0.680 nm or less.

Claim 14. (previously presented): The electrical insulating composite material as described in Claim 11, wherein the amount of boron in a depth of 1 nm from the surface of vapor grown carbon fiber is about 10% by mass or more, based on the entire mass of the vapor grown carbon fiber.

Claim 15. (previously presented): The electrical insulating composite material as described in Claim 11, wherein the fiber has a heat conductivity of about $150 \text{ Wm}^{-1}\text{K}^{-1}$ or more when compressed at a bulk density of 0.8 g/cm^3 .

Claim 16. (previously presented): A heat-releasing material comprising an electrical insulating vapor grown carbon fiber having a fiber diameter of 0.01 to 0.5 μm , wherein the surface thereof is partially or entirely coated with an electrical insulating material of boron

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nitride and the amount of boron in a depth of 1 nm from the surface of the vapor grown carbon fiber is about 10% by mass or more, based on the entire mass of the vapor grown fiber having a depth of 1 nm from the surface, and wherein the electrical insulating vapor grown carbon fiber has a specific resistivity of $10^3 \Omega \cdot \text{cm}$ or more when compressed at a bulk density of 0.8 g/cm^3 .

Claim 17. (canceled).

Claim 18. (previously presented): The heat-releasing material as described in Claim 16, wherein the boron nitride is present in an amount of about 2% by mass or more based on an entire amount of vapor grown carbon fiber and the fiber has a Co value of 0.680 nm or less.

Claim 19. (canceled)

Claim 20. (previously presented): The heat-releasing material as described in Claim 16, wherein the fiber has a heat conductivity of about $150 \text{ Wm}^{-1}\text{K}^{-1}$ or more when compressed at a bulk density of 0.8 g/cm^3 .

Claim 21. (currently amended): The method for producing an electrical insulating vapor grown carbon fiber as described in claim ~~6~~7, wherein the amount of boron in a depth of 1 nm from the surface of the vapor grown carbon fiber is about 10% by mass or more, based on the entire mass of the vapor grown fiber having a depth of 1 nm from the surface.